10/570,836
search seq.
Lycook 8/15/07

CC related urticaria), hypertensive toxemia, glomerular endotheliosis and
CC cholestasis. The present sequence represents a homolog of the human
CC pregnancy zone protein precursor-like protein NOV10. Note: The sequence
CC data for this patent is also available in electronic format directly from
CC the US patent office at
CC seqdata.uspto.gov/sequence.html?DocID=20060009634.
XX
SQ Sequence 1450 AA;

Query Match 100.0%; Score 88; DB 10; Length 1450;
Best Local Similarity 100.0%; Pred. No. 9.5e-06;
Matches 18; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 LLIYAVLPTGDVIGDSAK 18
||||||||||||||||||
Db 516 LLIYAVLPTGDVIGDSAK 533

RESULT 18
AAU81018
ID AAU81018 standard; protein; 1451 AA.
XX
AC AAU81018;
XX
DT 09-APR-2002 (first entry)
XX
DE Human alpha2 macroglobulin (alpha2M) receptor #1 mature protein.
XX
KW Human; mouse; alpha2 macroglobulin; receptor; alpha2M; HSP;
KW heat shock protein; alpha2M receptor-HSP complex; autoimmune disorder;
KW multiple sclerosis; rheumatoid arthritis; endocytosis; inflammation;
KW cytokine clearance; antigen presentation disruption; carcinoma; sarcoma;
KW proliferative disorder; cancer; infectious disease; bacterial infection;
KW intracellular parasite; hypercholesterolaemia; protozoan infection;
KW Alzheimer's disease; diabetes; osteoporosis; viral infection;

protein.
XX
OS Homo sapiens.
XX
PN WO200192474-A1.
XX
PD 06-DEC-2001.
XX
PF 04-JUN-2001; 2001WO-US018041.
XX
PR 02-JUN-2000; 2000US-0209095P.
PR 25-JUL-2000; 2000US-00625137.
PR 22-SEP-2000; 2000US-00668724.
PR 28-DEC-2000; 2000US-00750972.
XX
PA (UYCO-) UNIV CONNECTICUT HEALTH CENT.
XX
PI Srivastava PK;
XX
DR WPI; 2002-122061/16.
XX
PT Screening assays for identifying compounds useful for treating immune
PT disorders, comprises identification of compounds that modulate alpha 2-
PT macroglobulin receptor-heat shock protein interaction.
XX
PS Disclosure; Fig 13B; 236pp; English.
XX
CC The invention relates to screening assays comprising identification of
CC compounds that modulate alpha2 macroglobulin (alpha2M) receptor (which
CC also functions as a heat shock protein (HSP) receptor)-HSP interaction. A
CC compound that modulates the activity of an alpha2M receptor-HSP complex
CC can be identified by contacting the compound with HSP and alpha2M
CC receptor and measuring the level of alpha2M activity or expression. If
CC the level differs from that perceived in the absence of the test
CC compound, a compound that modulates an alpha2M receptor-HSP-mediated
CC process is identified. The identified compounds are useful

for treating
CC autoimmune disorders (such as multiple sclerosis or rheumatoid
CC arthritis), diseases or disorders involving disruption of antigen
CC presentation, endocytosis, cytokine clearance or inflammation,
CC proliferative disorders (such as cancers including sarcomas and
CC carcinomas), infectious diseases (such as those caused by viruses,
CC bacteria, protozoans and intracellular parasites), hypercholesterolaemia,
CC Alzheimer's disease, diabetes and osteoporosis. Sequences AAU81016-
CC AAU81073 represent human and mouse alpha2M receptors and peptide
CC fragments of the invention
XX
SQ Sequence 1451 AA;

Query Match 100.0%; Score 88; DB 5; Length 1451;
Best Local Similarity 100.0%; Pred. No. 9.5e-06;
Matches 18; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 LLIYAVLPTGDVIGDSAK 18
              ||||||||||||||||||
Db        517 LLIYAVLPTGDVIGDSAK 534
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RESULT 19
ADK41537
ID ADK41537 standard; protein; 1451 AA.
XX
AC ADK41537;
XX
DT 06-MAY-2004 (first entry)
XX
DE Anti-cell surface antigen related protein #21.
XX
KW cytostatic; immunosuppressive; gene therapy; anti-cell surface antigen;
KW CD84Hyl; alpha2MHy; IgFBP-7Hyl; Toll-like receptor 9; VpreB1; antibody;
KW lymphoma; cancer; autoimmune disorder; systemic lupus

10/570,836
Search
Lycook 8/15/07

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     (FILE 'HOME' ENTERED AT 09:54:13 ON 15 AUG 2007)

     FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 09:54:53 ON 15
     AUG 2007
L1         21001 S (ALPHA 2 MACROGLOBULIN)
L2           363 S L1 AND DIABETE?
L3            20 S L2 AND URINE?
L4            14 DUPLICATE REMOVE L3 (6 DUPLICATES REMOVED)
L5            11 S L4 AND PD<2004
L6             0 S L2 AND (MASS SPEC)
L7            21 S L2 AND MASS
L8            13 DUPLICATE REMOVE L7 (8 DUPLICATES REMOVED)
L9             0 S L8 AND PD,2004
L10            4 S L8 AND PD<2004

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d his

     (FILE 'HOME' ENTERED AT 09:54:13 ON 15 AUG 2007)

     FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 09:54:53 ON 15
     AUG 2007
L1         21001 S (ALPHA 2 MACROGLOBULIN)
L2           363 S L1 AND DIABETE?
L3            20 S L2 AND URINE?
L4            14 DUPLICATE REMOVE L3 (6 DUPLICATES REMOVED)
L5            11 S L4 AND PD<2004
L6             0 S L2 AND (MASS SPEC)
L7            21 S L2 AND MASS
L8            13 DUPLICATE REMOVE L7 (8 DUPLICATES REMOVED)
L9             0 S L8 AND PD,2004
L10            4 S L8 AND PD<2004

=>
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ANSWER 2 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
AN 1995:509170 BIOSIS
DN PREV199598514220
TI A radioimmunometric assay for urinary alpha-2-macroglobulin.
AU Ito, Seiki; Usami, Akio; Yamazaki, Masatoshi; Shibata, Akira
CS Div. Gerontol., Akita Univ. Hosp., Akita 010, Japan
SO Tohoku Journal of Experimental Medicine, (1995) Vol. 176, No. 3, pp. 137-147.
CODEN: TJEMAO. ISSN: 0040-8727.
DT Article
LA English
ED Entered STN: 29 Nov 1995
Last Updated on STN: 29 Nov 1995
AB To measure urinary alpha-2-macroglobulin levels, a sensitive radioimmunometric assay was established. The least detectable level of this assay was 225 pg/ml. A linear correlation between alpha-2-macroglobulin levels and serial dilution of urine samples was found. Western blot analysis and study on column chromatography revealed that the molecular weight of alpha-2-macroglobulin in urine was identical to that of serum alpha-2-macroglobulin. The findings suggested that urinary substance detected by the present assay was truly alpha-2-macroglobulin. Timed overnight urine samples from 49 diabetic patients with retinopathy and 20 healthy controls were measured by the present assay. Patients were classified as Albustix-negative and Albustix-positive patients. The highest urinary alpha-2-macroglobulin excretion rates (alpha-2-MER) was found in Albustix-positive patients followed by Albustix-negative patients and the healthy controls. In view of the fact that the stroke radius of alpha-2-macroglobulin (88 ANG ) is larger than that of the restrictive pore (56 ANG ), the present finding suggests that leakage of alpha-2-macroglobulin in urine may be induced by defect of non-discriminatory pores in the glomerular basement membrane proposed by Deen and colleagues.
CC Radiation biology - Radiation and isotope techniques 06504
Clinical biochemistry - General methods and applications 10006
Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Carbohydrates 10068
Biophysics - Methods and techniques 10504
Metabolism - Carbohydrates 13004
Metabolism - Proteins, peptides and amino acids 13012
Metabolism - Metabolic disorders 13020
Urinary system - Physiology and biochemistry 15504
Endocrine - Pancreas 17008
IT Major Concepts
Biochemistry and Molecular Biophysics; Clinical Chemistry (Allied Medical Sciences); Endocrine System (Chemical Coordination and Homeostasis); Metabolism; Radiology (Medical Sciences); Urinary System (Chemical Coordination and Homeostasis)
IT Miscellaneous Descriptors
ANALYTICAL METHOD; CLINICAL FEATURES; DIABETES MELLITUS; PROTEINURIA
ORGN Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Verte

ANSWER 2 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
AN 1995:509170 BIOSIS
DN PREV199598514220
TI A radioimmunometric assay for urinary alpha-2-macroglobulin.
AU Ito, Seiki; Usami, Akio; Yamazaki, Masatoshi; Shibata, Akira
CS Div. Gerontol., Akita Univ. Hosp., Akita 010, Japan
SO Tohoku Journal of Experimental Medicine, (1995) Vol. 176, No. 3, pp. 137-147.
CODEN: TJEMAO. ISSN: 0040-8727.
DT Article
LA English
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CC Radiation biology - Radiation and isotope techniques 06504
Clinical biochemistry - General methods and applications 10006
Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Carbohydrates 10068
Biophysics - Methods and techniques 10504
Metabolism - Carbohydrates 13004
Metabolism - Proteins, peptides and amino acids 13012
Metabolism - Metabolic disorders 13020
Urinary system - Physiology and biochemistry 15504
Endocrine - Pancreas 17008
IT Major Concepts
Biochemistry and Molecular Biophysics; Clinical Chemistry (Allied Medical Sciences); Endocrine System (Chemical Coordination and Homeostasis); Metabolism; Radiology (Medical Sciences); Urinary System (Chemical Coordination and Homeostasis)
IT Miscellaneous Descriptors
ANALYTICAL METHOD; CLINICAL FEATURES; DIABETES MELLITUS; PROTEINURIA
ORGN Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Verte

10/570,836
Search
L/Cook 8/15/07

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(FILE 'HOME' ENTERED AT 11:51:58 ON 15 AUG 2007)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 11:52:24 ON 15 AUG 2007

```
L1         19581 S URINE AND PEPTIDE?
L2          1122 S L1 AND DIGEST?
L3           247 S L2 AND (MASS SPECTR?)
L4             0 S L3 AND TCA?
L5             0 S L3 AND ACETONE?
L6           109 DUPLICATE REMOVE L3 (138 DUPLICATES REMOVED)
L7            64 S L6 AND PD<2004
L8         21001 S (ALPHA 2 MACROGLOBULIN)
L9             0 S L7 AND L8
L10            3 S L7 AND DIABETE?
L11          363 S L8 AND DIABETE?
L12          229 DUPLICATE REMOVE L11 (134 DUPLICATES REMOVED)
L13          193 S L12 AND PD<2004
L14            0 S L13 AND (MASS SPECTRO?)
L15            8 S L13 AND URINE?
L16            9 S L13 AND PEPTIDE?
L17            9 S L16 NOT L15
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d his

     (FILE 'HOME' ENTERED AT 11:51:58 ON 15 AUG 2007)

     FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 11:52:24 ON 15
     AUG 2007
L1         19581 S URINE AND PEPTIDE?
L2          1122 S L1 AND DIGEST?
L3           247 S L2 AND (MASS SPECTR?)
L4             0 S L3 AND TCA?
L5             0 S L3 AND ACETONE?
L6           109 DUPLICATE REMOVE L3 (138 DUPLICATES REMOVED)
L7            64 S L6 AND PD<2004
L8         21001 S (ALPHA 2 MACROGLOBULIN)
L9             0 S L7 AND L8
L10            3 S L7 AND DIABETE?
L11          363 S L8 AND DIABETE?
L12          229 DUPLICATE REMOVE L11 (134 DUPLICATES REMOVED)
L13          193 S L12 AND PD<2004
L14            0 S L13 AND (MASS SPECTRO?)
L15            8 S L13 AND URINE?
L16            9 S L13 AND PEPTIDE?
L17            9 S L16 NOT L15

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ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2002:778627 CAPLUS

DN 137:259345

ED Entered STN: 11 Oct 2002

TI Method for the quantitative determination of proteinase inhibitors in the body fluids of human or animal using porcine pancreatic elastase and diagnostic applications

IN Bristow, Cindy L.

PA USA

SO U.S. Pat. Appl. Publ., 11 pp., Cont.-in-part of U.S. Ser. No. 452,699.
CODEN: USXXCO

DT Patent

LA English

IC ICM C12Q001-37
ICS G06F019-00; G01N033-48; G01N033-50

INCL 435023000; X70-2 1.9

CC 7-3 (Enzymes)
Section cross-reference(s): 14

FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 2002146756 | A1 | 20021010 | US 2002-105719 | 20020325 <-- |
| | US 6887678 | B2 | 20050503 | | |
| PRAI | US 1998-110580P | P | 19981202 | | |
| | US 1999-452699 | A2 | 19991202 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| US 2002146756 | ICM | C12Q001-37 |
| | ICS | G06F019-00; G01N033-48; G01N033-50 |
| | INCL | 435023000; X70-2 1.9 |
| | IPCI | C12Q0001-37 [ICM,7]; G06F0019-00 [ICS,7]; G01N0033-48 [ICS,7]; G01N0033-50 [ICS,7] |
| | IPCR | C12Q0001-37 [I,C*]; C12Q0001-37 [I,A] |
| | NCL | 435/023.000; 702/019.000 |
| | ECLA | C12Q001/37 |

AB A method is provided for the quant. detns. of active and inactive concns. of proteinase inhibitors, such as α1-antitrypsin (α1PI) and alpha.2-macroglobulin (α2M), in the body fluids of humans and animals. Porcine pancreatic elastase were used in the assays for α1PI and α2M. Diagnostic applications of the method are presented.

ST proteinase inhibitor detn elastase body fluid diagnosis; elastase alpha1 antitrypsin alpha1 alpha2 macroglobulin detn diagnosis

IT Infection
(bacterial; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

IT Diagnosis
(cancer; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

IT AIDS (disease)
(infection; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

IT Autoimmune disease
(insulin-dependent diabetes mellitus; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

IT Diabetes mellitus
(insulin-dependent; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and

ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2002:778627 CAPLUS

DN 137:259345

ED Entered STN: 11 Oct 2002

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LA English

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| | ECLA | C12Q001/37 |

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(bacterial; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

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(cancer; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

IT AIDS (disease)
(infection; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

IT Autoimmune disease
(insulin-dependent diabetes mellitus; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

IT Diabetes mellitus
(insulin-dependent; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and

diagnostic applications)
IT Aging, animal
Animals
Arthritis
Ascitic fluid
Asthma
Atherosclerosis
Blood analysis
Body fluid
Human
Lymph node, disease
Neoplasm
Periodontium, disease
Regression analysis
Saliva
Tear (ocular fluid)
Urine analysis
(method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Diagnosis
(mol.; method for quant. determination of proteinase inhibitors in body fluids
of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Nose
(nasal specimens; method for quant. determination of proteinase inhibitors in
body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Enzyme kinetics
(of inhibition; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Infection
(parasitic; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Semen
(plasma; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Lupus erythematosus
(systemic; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Vagina
(vaginal specimens; method for quant. determination of proteinase inhibitors in
body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Infection
(viral; method for quant. determination of proteinase inhibitors in body fluids
of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Macroglobulins
RL: ANT (Analyte); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(α2-; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT 9041-92-3, α1-Antitrypsin 37205-61-1, Proteinase inhibitor
RL: ANT (Analyte); DGN (Diagnostic use); ANST (Analytical study); BIOL

diagnostic applications)
IT Aging, animal
Animals
Arthritis
Ascitic fluid
Asthma
Atherosclerosis
Blood analysis
Body fluid
Human
Lymph node, disease
Neoplasm
Periodontium, disease
Regression analysis
Saliva
Tear (ocular fluid)
Urine analysis
(method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Diagnosis
(mol.; method for quant. determination of proteinase inhibitors in body fluids
of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Nose
(nasal specimens; method for quant. determination of proteinase inhibitors in
body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Enzyme kinetics
(of inhibition; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Infection
(parasitic; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Semen
(plasma; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Lupus erythematosus
(systemic; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Vagina
(vaginal specimens; method for quant. determination of proteinase inhibitors in
body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Infection
(viral; method for quant. determination of proteinase inhibitors in body fluids
of human or animal using porcine pancreatic elastase and diagnostic applications)
IT Macroglobulins
RL: ANT (Analyte); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(α2-; method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)
IT 9041-92-3, α1-Antitrypsin 37205-61-1, Proteinase inhibitor
RL: ANT (Analyte); DGN (Diagnostic use); ANST (Analytical study); BIOL

(Biological study); USES (Uses)
(method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

IT 9004-06-2, Elastase
RL: ARG (Analytical reagent use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; SU 1573430 A 1990 CAPLUS
(2) Anon; DE 3938971 A1 1991 CAPLUS
(3) Anon; RU 2039983 C1 1995 CAPLUS
(4) Anon; EP 0288841 A2 1998 CAPLUS
(5) Bristow, C; Clinical and Diagnostic Lab Immunology. 2001, V8(5), P937 MEDLINE
(6) Coan; US 4697003 A 1987 CAPLUS
(7) Lloyd; US 5073487 A 1991 CAPLUS
(8) Ralston; US 6093804 A 2000 CAPLUS
(9) Simon; US 5773430 A 1998 CAPLUS
(10) Travis; US 4493891 A 1985 CAPLUS

(Biological study); USES (Uses)
(method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

IT 9004-06-2, Elastase
RL: ARG (Analytical reagent use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(method for quant. determination of proteinase inhibitors in body fluids of human or animal using porcine pancreatic elastase and diagnostic applications)

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RE

(1) Anon; SU 1573430 A 1990 CAPLUS
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(6) Coan; US 4697003 A 1987 CAPLUS
(7) Lloyd; US 5073487 A 1991 CAPLUS
(8) Ralston; US 6093804 A 2000 CAPLUS
(9) Simon; US 5773430 A 1998 CAPLUS
(10) Travis; US 4493891 A 1985 CAPLUS

ANSWER 8 OF 9 MEDLINE on STN
AN 2002133559 MEDLINE
DN PubMed ID: 11868856
TI A study of plasma alpha-2-macroglobulin levels in type 2 diabetic subjects with microalbuminuria.
AU Ahmad J; Singh M; Saleemuddin M
CS Department of Medicine, JN Medical College, Aligarh.
SO The Journal of the Association of Physicians of India, (2001 Nov) Vol. 49, pp. 1062-5.
Journal code: 7505585. ISSN: 0004-5772.
CY India
DT (CLINICAL TRIAL)
(COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LA English
FS Priority Journals
EM 200203
ED Entered STN: 1 Mar 2002
Last Updated on STN: 15 Mar 2002
Entered Medline: 14 Mar 2002
AB BACKGROUND: Alpha-2 macroglobulin (Alpha-2-M) is a major plasma protease inhibitor that also regulates the activity of a variety of bioactive peptides including interleukins and exerts a range of immunomodulatory effects. OBJECTIVE: We conducted the present study with the objective to study the alpha-2-M levels in type 2 diabetic subjects with microalbuminuria in an attempt to establish alpha-2-M as a predictor of microvascular complications in diabetes. MATERIAL AND METHODS: Plasma Alpha-2-M levels were assayed in 100 (53 males and 47 females) randomly selected type 2 diabetic subjects with microalbuminuria. Diabetes was diagnosed according to the expert committee report of 1998. Patients with any acute metabolic complication like hypoglycemia, ketoacidosis, cerebrovascular accident or any acute infection were not included in the study group. RESULTS: Majority of patients belonged to 40-60 years age group. In our study alpha-2-M levels indicated a clear increase in diabetic subjects with the increasing age of subjects confirmed by multiple logistical analysis. Alpha-2-M levels were not found to be significantly different between males and females (55.6 +/- 11.3 vs. 53.7 +/- 10.5). Duration of diabetes was found to be an important confounding variable showing a direct positive correlation with alpha-2-M levels and also a significant correlation was found between alpha-2-M levels with different levels of microalbuminuria on multiple logistical analysis. No significant relation of alpha-2-M levels with either fasting blood sugar or HbA1 was observed. CONCLUSION: The increase in plasma alpha-2 macroglobulin levels in diabetes may be a correlative measure to encounter the potential proteolytic challenge associated with diabetic microangiopathy, even very early in the course of the disease. Alph-2 macroglobulin may yet be one of the most specific markers of microvascular complications in diabetes than any other serum protein.
CT Check Tags: Female; Male
Aged
*Albuminuria: DI, diagnosis
*Diabetes Mellitus, Type 2: BL, blood
Diabetes Mellitus, Type 2: DI, diagnosis
Diabetic Angiopathies: DI, diagnosis
Humans
Logistic Models
Middle Aged
Predictive Value of Tests
Probability
Prognosis

ANSWER 8 OF 9 MEDLINE on STN
AN 2002133559 MEDLINE
DN PubMed ID: 11868856
TI A study of plasma alpha-2-macroglobulin levels in type 2 diabetic subjects with microalbuminuria.
AU Ahmad J; Singh M; Saleemuddin M
CS Department of Medicine, JN Medical College, Aligarh.
SO The Journal of the Association of Physicians of India, (2001 Nov) Vol. 49, pp. 1062-5.
Journal code: 7505585. ISSN: 0004-5772.
CY India
DT (CLINICAL TRIAL)
(COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LA English
FS Priority Journals
EM 200203
ED Entered STN: 1 Mar 2002
Last Updated on STN: 15 Mar 2002
Entered Medline: 14 Mar 2002
AB BACKGROUND: Alpha-2 macroglobulin (Alpha-2-M) is a major plasma protease inhibitor that also regulates the activity of a variety of bioactive peptides including interleukins and exerts a range of immunomodulatory effects. OBJECTIVE: We conducted the present study with the objective to study the alpha-2-M levels in type 2 diabetic subjects with microalbuminuria in an attempt to establish alpha-2-M as a predictor of microvascular complications in diabetes. MATERIAL AND METHODS: Plasma Alpha-2-M levels were assayed in 100 (53 males and 47 females) randomly selected type 2 diabetic subjects with microalbuminuria. Diabetes was diagnosed according to the expert committee report of 1998. Patients with any acute metabolic complication like hypoglycemia, ketoacidosis, cerebrovascular accident or any acute infection were not included in the study group. RESULTS: Majority of patients belonged to 40-60 years age group. In our study alpha-2-M levels indicated a clear increase in diabetic subjects with the increasing age of subjects confirmed by multiple logistical analysis. Alpha-2-M levels were not found to be significantly different between males and females (55.6 +/- 11.3 vs. 53.7 +/- 10.5). Duration of diabetes was found to be an important confounding variable showing a direct positive correlation with alpha-2-M levels and also a significant correlation was found between alpha-2-M levels with different levels of microalbuminuria on multiple logistical analysis. No significant relation of alpha-2-M levels with either fasting blood sugar or HbA1 was observed. CONCLUSION: The increase in plasma alpha-2 macroglobulin levels in diabetes may be a correlative measure to encounter the potential proteolytic challenge associated with diabetic microangiopathy, even very early in the course of the disease. Alph-2 macroglobulin may yet be one of the most specific markers of microvascular complications in diabetes than any other serum protein.
CT Check Tags: Female; Male
Aged
*Albuminuria: DI, diagnosis
*Diabetes Mellitus, Type 2: BL, blood
Diabetes Mellitus, Type 2: DI, diagnosis
Diabetic Angiopathies: DI, diagnosis
Humans
Logistic Models
Middle Aged
Predictive Value of Tests
Probability
Prognosis

Prospective Studies
Sensitivity and Specificity
Severity of Illness Index
*alpha-Macroglobulins: AN, analysis
CN 0 (alpha-Macroglobulins)

Prospective Studies
Sensitivity and Specificity
Severity of Illness Index
*alpha-Macroglobulins: AN, analysis
CN 0 (alpha-Macroglobulins)

10/570,836
Search
LYcook 8/15/07

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(FILE 'HOME' ENTERED AT 14:51:32 ON 15 AUG 2007)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 14:51:52 ON 15 AUG 2007

| | | |
|---|---|---|
| L1 | 175 | S (ALPHA 2 MACROGLOBULIN) AND (MASS SPECTR?) |
| L2 | 100 | DUPLICATE REMOVE L1 (75 DUPLICATES REMOVED) |
| L3 | 42 | S L2 AND PD<2004 |
| L4 | 0 | S L3 AND DIAB? |
| L5 | 8 | S L3 AND DIGEST? |
| L6 | 21003 | S (ALPHA 2 MACROGLOBULIN) |
| L7 | 13 | S L6 AND FINGERPRINT? |
| L8 | 6 | DUPLICATE REMOVE L7 (7 DUPLICATES REMOVED) |
| L9 | 4 | S L8 AND PD<2004 |

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d his

     (FILE 'HOME' ENTERED AT 14:51:32 ON 15 AUG 2007)

     FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 14:51:52 ON 15
     AUG 2007
L1           175 S (ALPHA 2 MACROGLOBULIN) AND (MASS SPECTR?)
L2           100 DUPLICATE REMOVE L1 (75 DUPLICATES REMOVED)
L3            42 S L2 AND PD<2004
L4             0 S L3 AND DIAB?
L5             8 S L3 AND DIGEST?
L6         21003 S (ALPHA 2 MACROGLOBULIN)
L7            13 S L6 AND FINGERPRINT?
L8             6 DUPLICATE REMOVE L7 (7 DUPLICATES REMOVED)
L9             4 S L8 AND PD<2004

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ANSWER 1 OF 4 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
AN 2004:78571 BIOSIS
DN PREV200400081442
TI Elevated levels of serum alpha2 macroglobulin in wild black bears during hibernation.
AU Sheikh, Ashfaq M.; Chauhan, Ved; Tsiouris, John A. [Reprint Author]; Mehta, Pankaj D.; Burguess, Kelcey; Fenko, Michael D.; Spivack, Warren; Vaughan, Michael; Malik, Mazhar
CS NYS Institute for Basic Research in Developmental Disabilities, 1050 Forest Hill Road, Staten Island, NY, 10314, USA
john.Tsiouris@omr.state.ny.us
SO Biochimie (Paris), (October 2003) Vol. 85, No. 10, pp. 1027-1032. print.
CODEN: BICMBE. ISSN: 0300-9084.
DT Article
LA English
ED Entered STN: 4 Feb 2004
Last Updated on STN: 4 Feb 2004
AB Bear serum alpha2 macroglobulin (alpha2M) was purified by sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) and partially characterized by tryptic digestion of alpha2M and analysis of the peptides by peptide mass fingerprinting. The molecular weight of bear serum alpha2M was 181 kDa, same as for human serum alpha2M, on SDS-PAGE. However, the MALDI mass spectrum of the tryptic digested bear serum alpha2M showed that it is different from human alpha2M or other data bank proteins. Liquid chromatography (LC)/mass spectrometry (MS)/MS of the proteolytic products of bear serum alpha2M showed eight peptides that had similarities to human alpha2M suggesting that the protein of interest was indeed alpha2M of bear. The polyclonal antibody against bear serum alpha2M recognized only one protein from the western blot of bear serum proteins. It also recognized human alpha2M. The levels of serum alpha2M were significantly increased during hibernating state as compared to active state of bears indicating its protective role from the consequences of the metabolic depression during hibernation.
CC Biochemistry studies - General 10060
Enzymes - General and comparative studies: coenzymes 10802
Blood - Blood and lymph studies 15002
Blood - Blood cell studies 15004
IT Major Concepts
Biochemistry and Molecular Biophysics
IT Parts, Structures, & Systems of Organisms
serum: blood and lymphatics
IT Chemicals & Biochemicals
alpha-2 macroglobulin: characterization, purification; trypsin [EC 3.4.21.4]
IT Miscellaneous Descriptors
hibernation; metabolic depression
ORGN Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human (common)
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
ORGN Classifier
Ursidae 85790
Super Taxa
Carnivora; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
black bear (common): wild
Taxa Notes
Animals, Carnivores, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

ANSWER 1 OF 4 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
AN 2004:78571 BIOSIS
DN PREV200400081442
TI Elevated levels of serum alpha2 macroglobulin in wild black bears during hibernation.
AU Sheikh, Ashfaq M.; Chauhan, Ved; Tsiouris, John A. [Reprint Author]; Mehta, Pankaj D.; Burguess, Kelcey; Fenko, Michael D.; Spivack, Warren; Vaughan, Michael; Malik, Mazhar
CS NYS Institute for Basic Research in Developmental Disabilities, 1050 Forest Hill Road, Staten Island, NY, 10314, USA
john.Tsiouris@omr.state.ny.us
SO Biochimie (Paris), (October 2003) Vol. 85, No. 10, pp. 1027-1032. print.
CODEN: BICMBE. ISSN: 0300-9084.
DT Article
LA English
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Last Updated on STN: 4 Feb 2004
AB Bear serum alpha2 macroglobulin (alpha2M) was purified by sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) and partially characterized by tryptic digestion of alpha2M and analysis of the peptides by peptide mass fingerprinting. The molecular weight of bear serum alpha2M was 181 kDa, same as for human serum alpha2M, on SDS-PAGE. However, the MALDI mass spectrum of the tryptic digested bear serum alpha2M showed that it is different from human alpha2M or other data bank proteins. Liquid chromatography (LC)/mass spectrometry (MS)/MS of the proteolytic products of bear serum alpha2M showed eight peptides that had similarities to human alpha2M suggesting that the protein of interest was indeed alpha2M of bear. The polyclonal antibody against bear serum alpha2M recognized only one protein from the western blot of bear serum proteins. It also recognized human alpha2M. The levels of serum alpha2M were significantly increased during hibernating state as compared to active state of bears indicating its protective role from the consequences of the metabolic depression during hibernation.
CC Biochemistry studies - General 10060
Enzymes - General and comparative studies: coenzymes 10802
Blood - Blood and lymph studies 15002
Blood - Blood cell studies 15004
IT Major Concepts
Biochemistry and Molecular Biophysics
IT Parts, Structures, & Systems of Organisms
serum: blood and lymphatics
IT Chemicals & Biochemicals
alpha-2 macroglobulin: characterization, purification; trypsin [EC 3.4.21.4]
IT Miscellaneous Descriptors
hibernation; metabolic depression
ORGN Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human (common)
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
ORGN Classifier
Ursidae 85790
Super Taxa
Carnivora; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
black bear (common): wild
Taxa Notes
Animals, Carnivores, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

RN 9002-07-7 (trypsin)
9002-07-7 (EC 3.4.21.4)

RN 9002-07-7 (trypsin)
9002-07-7 (EC 3.4.21.4)

10/570,836
Search
LHCook 8/15/07

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(FILE 'HOME' ENTERED AT 18:34:36 ON 15 AUG 2007)

FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 18:34:56 ON 15 AUG 2007

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| L1 | 588464 | S | (MASS SPECTROMET?) |
| L2 | 60313 | S | L1 AND PEPTIDE? |
| L3 | 1059 | S | L2 AND URINE? |
| L4 | 1 | S | L3 AND TCA? |
| L5 | 226 | S | L3 AND ELECTROPHORESIS? |
| L6 | 149 | | DUPLICATE REMOVE L5 (77 DUPLICATES REMOVED) |
| L7 | 54 | S | L6 AND PD<2004 |
| L8 | 5 | S | L7 AND DIABETE? |

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d his

     (FILE 'HOME' ENTERED AT 18:34:36 ON 15 AUG 2007)

     FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 18:34:56 ON 15
     AUG 2007
L1        588464 S (MASS SPECTROMET?)
L2         60313 S L1 AND PEPTIDE?
L3          1059 S L2 AND URINE?
L4             1 S L3 AND TCA?
L5           226 S L3 AND ELECTROPHORESIS?
L6           149 DUPLICATE REMOVE L5 (77 DUPLICATES REMOVED)
L7            54 S L6 AND PD<2004
L8             5 S L7 AND DIABETE?

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ANSWER 17 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:869179 CAPLUS
DN 137:366001
ED Entered STN: 15 Nov 2002
TI Process for preparation and analysis of protein samples
IN Parker, Kenneth C.; Nadler, Timothy K.; Vella, George J.; Huang, Yulin; Aebersold, Rudolf H.; Smolka, Marcus B.
PA Perseptive Biosystems, Inc., USA; Institute for Systems Biology
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 6
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI WO 2002090929 | A2 | 20021114 | WO 2002-US14369 | 20020507 <-- |
| WO 2002090929 | A3 | 20030925 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| US 2002192720 | A1 | 20021219 | US 2001-851058 | 20010508 <-- |
| US 7045296 | B2 | 20060516 | | |
| AU 2002340828 | A1 | 20021118 | AU 2002-340828 | 20020507 <-- |
| EP 1392848 | A2 | 20040303 | EP 2002-769368 | 20020507 |
| EP 1392848 | B1 | 20070103 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| JP 2004533610 | T | 20041104 | JP 2002-588141 | 20020507 |
| AT 350666 | T | 20070115 | AT 2002-769368 | 20020507 |
| PRAI US 2001-851058 | A | 20010508 | | |
| WO 2002-US14369 | W | 20020507 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---|---|---|
| WO 2002090929 | ICM | G01N |
| | IPCI | G01N [ICM,7] |
| | IPCR | G01N0027-62 [I,C*]; G01N0027-62 [I,A]; G01N0027-447 [I,C*]; G01N0027-447 [I,A]; G01N0033-48 [I,C*]; G01N0033-48 [I,A]; G01N0033-483 [I,C*]; G01N0033-483 [I,A]; G01N0033-50 [I,C*]; G01N0033-50 [I,A]; G01N0033-60 [I,C*]; G01N0033-60 [I,A];'G01N0033-68 [I,C*]; G01N0033-68 [I,A] |
| | ECLA | G01N033/68A |
| US 2002192720 | IPCI | G01N0033-53 [I,A]; G01N0024-00 [I,A] |
| | IPCR | G01N0027-62 [I,C*]; G01N0027-62 [I,A]; G01N0027-447 [I,C*]; G01N0027-447 [I,A]; G01N0033-48 [I,C*]; G01N0033-48 [I,A]; G01N0033-483 [I,C*]; G01N0033-483 [I,A]; G01N0033-50 [I,C*]; G01N0033-50 [I,A]; G01N0033-60 [I,C*]; G01N0033-60 [I,A]; G01N0033-68 [I,C*]; G01N0033-68 [I,A] |
| | NCL | 435/007.900; 436/517.000 |
| | ECLA | G01N033/68A |
| AU 2002340828 | IPCI | C12Q0001-00 [ICS,7]; G01N0024-00 [ICS,7]; G01N0033-53 [ICS,7]; G01N0033-567 [ICS,7]; G01N0033-573 [ICS,7]; |

| | | |
|---|---|---|
| | | G01N0033-68 [ICS,7] |
| | IPCR | G01N0027-62 [I,C*]; G01N0027-447 [I,C*]; G01N0033-48 [I,C*]; G01N0033-483 [I,C*]; G01N0033-50 [I,C*]; G01N0033-60 [I,C*]; G01N0033-68 [I,C*]; G01N0027-62 [I,A]; G01N0027-447 [I,A]; G01N0033-48 [I,A]; G01N0033-483 [I,A]; G01N0033-50 [I,A]; G01N0033-60 [I,A]; G01N0033-68 [I,A] |
| EP 1392848 | IPCI | G01N0033-68 [I,C]; G01N0033-60 [I,C]; G01N0033-68 [I,A]; G01N0033-60 [I,A] |
| | IPCR | G01N0027-62 [I,C*]; G01N0027-62 [I,A]; G01N0033-68 [I,C]; G01N0033-68 [I,A]; G01N0027-447 [I,C*]; G01N0027-447 [I,A]; G01N0033-48 [I,C*]; G01N0033-48 [I,A]; G01N0033-483 [I,C*]; G01N0033-483 [I,A]; G01N0033-50 [I,C*]; G01N0033-50 [I,A]; G01N0033-60 [I,C]; G01N0033-60 [I,A] |
| | ECLA | G01N033/68A |
| JP 2004533610 | IPCI | G01N0033-483 [ICM,7]; G01N0027-62 [ICS,7]; G01N0033-48 [ICS,7]; G01N0033-50 [ICS,7]; G01N0027-447 [ICS,7] |
| | IPCR | G01N0033-60 [I,A]; G01N0033-60 [I,C*]; G01N0033-68 [I,A]; G01N0033-68 [I,C*] |
| | FTERM | 2G045/AA34; 2G045/BA13; 2G045/BB03; 2G045/BB14; 2G045/BB51; 2G045/CB01; 2G045/DA36; 2G045/FB05; 2G045/FB06; 2G045/FB08; 2G045/JA01 |
| AT 350666 | IPCI | G01N0033-68 [ICS,7]; G01N0033-60 [ICS,7] |
| | IPCR | G01N0027-62 [I,C*]; G01N0027-447 [I,C*]; G01N0033-48 [I,C*]; G01N0033-483 [I,C*]; G01N0033-50 [I,C*]; G01N0033-60 [I,C*]; G01N0033-68 [I,C*]; G01N0027-62 [I,A]; G01N0027-447 [I,A]; G01N0033-48 [I,A]; G01N0033-483 [I,A]; G01N0033-50 [I,A]; G01N0033-60 [I,A]; G01N0033-68 [I,A] |
| | ECLA | G01N033/68A |

AB The invention concerns methods using gel electrophoresis and mass spectrometry for the rapid, quant. anal. of proteins or protein function in mixts. of proteins derived from two or more samples in one unit operation. In one embodiment the method includes (a) preparing an extract of proteins from each of at least two different samples; (b) providing a set of substantially chemical identical and differentially isotopically labeled protein reagents, one for each sample; (c) reacting each protein sample of step (a) with a different reagent from the set of step (b) to provide isotopically labeled proteins; (d) mixing each of said isotopically labeled proteins to form a single mixture of different isotopically labeled proteins; (e) electrophoresing the mixture of step (d) by an electrophoresing method capable of separating proteins within said mixture; and (f) detecting the difference in the expression levels of the proteins in the two samples by spectrometry based on individual peptides derived from chemical or enzymic digestion. The anal. method can be used for qual. and particularly for quant. anal. of global protein expression profiles in cells and tissues, i.e. the quant. anal. of proteomes.

ST protein sample prep gel electrophoresis mass spectrometry digestion label

IT Reagents
RL: NUU (Other use, unclassified); USES (Uses)
(ICAT; process for preparation and anal. of protein samples)

IT Enzymes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(for digestion; process for preparation and anal. of protein samples)

IT Organelle
(membrane-containing; process for preparation and anal. of protein samples)

IT Animal cell
Animal tissue
Ascites
Blood serum

| | | |
|---|---|---|
| | | G01N0033-68 [ICS,7] |
| | IPCR | G01N0027-62 [I,C*]; G01N0027-447 [I,C*]; G01N0033-48 [I,C*]; G01N0033-483 [I,C*]; G01N0033-50 [I,C*]; G01N0033-60 [I,C*]; G01N0033-68 [I,C*]; G01N0027-62 [I,A]; G01N0027-447 [I,A]; G01N0033-48 [I,A]; G01N0033-483 [I,A]; G01N0033-50 [I,A]; G01N0033-60 [I,A]; G01N0033-68 [I,A] |
| EP 1392848 | IPCI | G01N0033-68 [I,C]; G01N0033-60 [I,C]; G01N0033-68 [I,A]; G01N0033-60 [I,A] |
| | IPCR | G01N0027-62 [I,C*]; G01N0027-62 [I,A]; G01N0033-68 [I,C]; G01N0033-68 [I,A]; G01N0027-447 [I,C*]; G01N0027-447 [I,A]; G01N0033-48 [I,C*]; G01N0033-48 [I,A]; G01N0033-483 [I,C*]; G01N0033-483 [I,A]; G01N0033-50 [I,C*]; G01N0033-50 [I,A]; G01N0033-60 [I,C]; G01N0033-60 [I,A] |
| | ECLA | G01N033/68A |
| JP 2004533610 | IPCI | G01N0033-483 [ICM,7]; G01N0027-62 [ICS,7]; G01N0033-48 [ICS,7]; G01N0033-50 [ICS,7]; G01N0027-447 [ICS,7] |
| | IPCR | G01N0033-60 [I,A]; G01N0033-60 [I,C*]; G01N0033-68 [I,A]; G01N0033-68 [I,C*] |
| | FTERM | 2G045/AA34; 2G045/BA13; 2G045/BB03; 2G045/BB14; 2G045/BB51; 2G045/CB01; 2G045/DA36; 2G045/FB05; 2G045/FB06; 2G045/FB08; 2G045/JA01 |
| AT 350666 | IPCI | G01N0033-68 [ICS,7]; G01N0033-60 [ICS,7] |
| | IPCR | G01N0027-62 [I,C*]; G01N0027-447 [I,C*]; G01N0033-48 [I,C*]; G01N0033-483 [I,C*]; G01N0033-50 [I,C*]; G01N0033-60 [I,C*]; G01N0033-68 [I,C*]; G01N0027-62 [I,A]; G01N0027-447 [I,A]; G01N0033-48 [I,A]; G01N0033-483 [I,A]; G01N0033-50 [I,A]; G01N0033-60 [I,A]; G01N0033-68 [I,A] |
| | ECLA | G01N033/68A |

AB The invention concerns methods using gel electrophoresis and mass spectrometry for the rapid, quant. anal. of proteins or protein function in mixts. of proteins derived from two or more samples in one unit operation. In one embodiment the method includes (a) preparing an extract of proteins from each of at least two different samples; (b) providing a set of substantially chemical identical and differentially isotopically labeled protein reagents, one for each sample; (c) reacting each protein sample of step (a) with a different reagent from the set of step (b) to provide isotopically labeled proteins; (d) mixing each of said isotopically labeled proteins to form a single mixture of different isotopically labeled proteins; (e) electrophoresing the mixture of step (d) by an electrophoresing method capable of separating proteins within said mixture; and (f) detecting the difference in the expression levels of the proteins in the two samples by spectrometry based on individual peptides derived from chemical or enzymic digestion. The anal. method can be used for qual. and particularly for quant. anal. of global protein expression profiles in cells and tissues, i.e. the quant. anal. of proteomes.

ST protein sample prep gel electrophoresis mass spectrometry digestion label

IT Reagents
RL: NUU (Other use, unclassified); USES (Uses)
(ICAT; process for preparation and anal. of protein samples)

IT Enzymes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(for digestion; process for preparation and anal. of protein samples)

IT Organelle
(membrane-containing; process for preparation and anal. of protein samples)

IT Animal cell
Animal tissue
Ascites
Blood serum

Cell nucleus
Cerebrospinal fluid
  Digestion, biological
Gel electrophoresis
Labels
  Mass spectrometry
Post-translational processing
Protein motifs
Sample preparation
Separation
Staining, coloring
  Urine
    (process for preparation and anal. of protein samples)

IT Proteins
RL: ANT (Analyte); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation)
    (process for preparation and anal. of protein samples)

IT Isotopes
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
    (process for preparation and anal. of protein samples)

IT 475134-24-8 475134-25-9 475134-26-0
RL: PRP (Properties)
    (unclaimed sequence; process for preparation and anal. of protein samples)

=>

Cell nucleus
Cerebrospinal fluid
  Digestion, biological
Gel electrophoresis
Labels
  Mass spectrometry
Post-translational processing
Protein motifs
Sample preparation
Separation
Staining, coloring
  Urine
    (process for preparation and anal. of protein samples)
IT  Proteins
    RL: ANT (Analyte); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation)
      (process for preparation and anal. of protein samples)
IT  Isotopes
    RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
      (process for preparation and anal. of protein samples)
IT  475134-24-8  475134-25-9  475134-26-0
    RL: PRP (Properties)
      (unclaimed sequence; process for preparation and anal. of protein samples)

=>

ANSWER 2 OF 17 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
AN 2001:415170 BIOSIS
DN PREV200100415170
TI Towards defining the urinary proteome using liquid chromatography-tandem mass spectrometry: I. Profiling an unfractionated tryptic digest.
AU Spahr, Chris S.; Davis, Michael T.; McGinley, Michael D.; Robinson, John H.; Bures, Edward J.; Beierle, Jill; Mort, Jessica; Courchesne, Paul L.; Chen, Kui; Wahl, Robert C.; Yu, Wen; Luethy, Roland; Patterson, Scott D. [Reprint author]
CS Celera Genomics, 45 West Gude Drive, Rockville, MD, 20850, USA scott.patterson@celera.com
SO Proteomics, (January, 2001) Vol. 1, No. 1, pp. 93-107. print. ISSN: 1615-9853.
DT Article
LA English
ED Entered STN: 29 Aug 2001
Last Updated on STN: 22 Feb 2002
AB The proteome of normal male urine from a commercial pooled source has been examined using direct liquid chromatography-tandem mass spectrometry (LC-MS/MS). The entire urinary protein mixture was denatured, reduced and enzymatically digested prior to LC-MS/MS analysis using a hybrid-quadrupole time-of-flight mass spectrometer (Q-TOF) to perform data-dependent ion selection and fragmentation. To fragment as many peptides as possible, the mixture was analyzed four separate times, with the mass spectrometer selecting ions for fragmentation from a subset of the entire mass range for each run. This approach requires only an autosampler on the HPLC for automation (i. e, unattended operation). Across these four analyses, 1.450 peptide MS/MS spectra were matched to 751 sequences to identify 124 gene products (proteins and translations of expressed sequence tags). Interestingly, the experimental time for these analyses was less than that required to run a single two-dimensional gel.
CC Biochemistry studies - General 10060
IT Major Concepts
Biochemistry and Molecular Biophysics; Methods and Techniques
IT Chemicals & Biochemicals
human urinary protein: Sigma, lyophilized; unfractionated tryptic digest: profiling; urinary proteome: definition
IT Methods & Equipment
HP 1100 HPLC system [HP 1100 high performance liquid chromatography system]: Hewlett-Packard, equipment; Investigator 2-D electrophoresis system: ESA, equipment; Micromass hybrid quadrupole-time of flight mass spectrometer: Micromass, equipment; hybrid-quadrupole time-of-flight mass spectrometer: equipment; liquid chromatography-tandem mass spectrometry: analytical method, comparison, liquid chromatography, spectroscopy: CB; two-dimensional gel electrophoresis: comparison, polyacrylamide gel electrophoresis, separation method
IT Miscellaneous Descriptors
peptide fragmentation; proteomics

ANSWER 2 OF 17 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
AN 2001:415170 BIOSIS
DN PREV200100415170
TI Towards defining the urinary proteome using liquid chromatography-tandem mass spectrometry: I. Profiling an unfractionated tryptic digest.
AU Spahr, Chris S.; Davis, Michael T.; McGinley, Michael D.; Robinson, John H.; Bures, Edward J.; Beierle, Jill; Mort, Jessica; Courchesne, Paul L.; Chen, Kui; Wahl, Robert C.; Yu, Wen; Luethy, Roland; Patterson, Scott D. [Reprint author]
CS Celera Genomics, 45 West Gude Drive, Rockville, MD, 20850, USA scott.patterson@celera.com
SO Proteomics, (January, 2001) Vol. 1, No. 1, pp. 93-107. print. ISSN: 1615-9853.
DT Article
LA English
ED Entered STN: 29 Aug 2001
Last Updated on STN: 22 Feb 2002
AB The proteome of normal male urine from a commercial pooled source has been examined using direct liquid chromatography-tandem mass spectrometry (LC-MS/MS). The entire urinary protein mixture was denatured, reduced and enzymatically digested prior to LC-MS/MS analysis using a hybrid-quadrupole time-of-flight mass spectrometer (Q-TOF) to perform data-dependent ion selection and fragmentation. To fragment as many peptides as possible, the mixture was analyzed four separate times, with the mass spectrometer selecting ions for fragmentation from a subset of the entire mass range for each run. This approach requires only an autosampler on the HPLC for automation (i. e, unattended operation). Across these four analyses, 1.450 peptide MS/MS spectra were matched to 751 sequences to identify 124 gene products (proteins and translations of expressed sequence tags). Interestingly, the experimental time for these analyses was less than that required to run a single two-dimensional gel.
CC Biochemistry studies - General 10060
IT Major Concepts
Biochemistry and Molecular Biophysics; Methods and Techniques
IT Chemicals & Biochemicals
human urinary protein: Sigma, lyophilized; unfractionated tryptic digest: profiling; urinary proteome: definition
IT Methods & Equipment
HP 1100 HPLC system [HP 1100 high performance liquid chromatography system]: Hewlett-Packard, equipment; Investigator 2-D electrophoresis system: ESA, equipment; Micromass hybrid quadrupole-time of flight mass spectrometer: Micromass, equipment; hybrid-quadrupole time-of-flight mass spectrometer: equipment; liquid chromatography-tandem mass spectrometry: analytical method, comparison, liquid chromatography, spectroscopy: CB; two-dimensional gel electrophoresis: comparison, polyacrylamide gel electrophoresis, separation method
IT Miscellaneous Descriptors
peptide fragmentation; proteomics

ANSWER 1 OF 17 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
AN 2002:566278 BIOSIS
DN PREV200200566278
TI Proteomics of renal disorders: Urinary proteome analysis by two-dimensional gel electrophoresis and MALDI-TOF mass spectrometry.
AU Kumar, Yadunanda; Uppuluri, Nageshwar Rao Venkata; Babu, Kishore; Phadke, Kishore; Kumar, Prasanna; Ballal, Sudarshan; Tatu, Utpal [Reprint author]
CS Department of Biochemistry, Indian Institute of Science, Bangalore, 560 012, India
tatu@biochem.iisc.ernet.in
SO Current Science (Bangalore), (25 March, 2002) Vol. 82, No. 6, pp. 655-663. print.
CODEN: CUSCAM. ISSN: 0011-3891.
DT Article
LA English
ED Entered STN: 7 Nov 2002
Last Updated on STN: 7 Nov 2002
AB The proteomes of urinary samples from patients with different renal conditions were analysed by two-dimensional electrophoresis and MALDI-TOF technology. Samples from three different renal conditions, namely kidney failure, nephrotic syndrome and microalbuminuria, were included in the analysis. Apart from the presence of albumin, the profiles of protein spots found in these urine samples were quite distinct. While kidney failure patients showed predominantly low molecular weight proteins, the nephrotic syndrome patients showed an abundance of relatively high molecular weight proteins clustering in the acidic range of the 2-D gels. Two different protein spots from kidney failure patients, four from nephrotic syndrome patients and three from micro-albuminuria patients were identified by in-gel protease digestions and analysis of resulting peptides by MALDI-TOF. The proteins identified were albumin, alpha-1-antitrypsin, alpha-1-acid glycoprotein 2, Zn-alpha-2-glycoprotein and alpha-1-microglobulin. Among these, only one was common between the proteomes of renal failure and nephrotic syndrome patients. Among the limited proteins found in microalbuminuria patients, three were common with the proteome of nephrotic syndrome. Overall profiles were, however, quite different. Our study showed that urinary proteomes of different renal conditions were different and emphasized the potential of urinary proteome analysis to augment existing tools in the diagnosis of renal disorders.
CC Biochemistry studies - General 10060
Biochemistry studies - Proteins, peptides and amino acids 10064
Pathology - Diagnostic 12504
Metabolism - Metabolic disorders 13020
Urinary system - Physiology and biochemistry 15504
Urinary system - Pathology 15506
IT Major Concepts
Biochemistry and Molecular Biophysics; Nephrology (Human Medicine, Medical Sciences)
IT Parts, Structures, & Systems of Organisms
urine: excretory system
IT Diseases
kidney failure: urologic disease
Kidney Failure (MeSH)
IT Diseases
microalbuminuria: metabolic disease, urologic disease
Albuminuria (MeSH)
IT Diseases
nephrotic syndrome: urologic disease
Nephrotic Syndrome (MeSH)
IT Diseases
renal disorders: urologic disease
IT Chemicals & Biochemicals

ANSWER 1 OF 17 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
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DN PREV200200566278
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CS Department of Biochemistry, Indian Institute of Science, Bangalore, 560 012, India
tatu@biochem.iisc.ernet.in
SO Current Science (Bangalore), (25 March, 2002) Vol. 82, No. 6, pp. 655-663. print.
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Metabolism - Metabolic disorders 13020
Urinary system - Physiology and biochemistry 15504
Urinary system - Pathology 15506
IT Major Concepts
Biochemistry and Molecular Biophysics; Nephrology (Human Medicine, Medical Sciences)
IT Parts, Structures, & Systems of Organisms
urine: excretory system
IT Diseases
kidney failure: urologic disease
Kidney Failure (MeSH)
IT Diseases
microalbuminuria: metabolic disease, urologic disease
Albuminuria (MeSH)
IT Diseases
nephrotic syndrome: urologic disease
Nephrotic Syndrome (MeSH)
IT Diseases
renal disorders: urologic disease
IT Chemicals & Biochemicals

albumin; alpha-1-acid glycoprotein 2; alpha-1-antitrypsin; alpha-1-microglobulin; high molecular weight proteins; low molecular weight proteins; zinc-alpha-2-glycoprotein

IT Methods & Equipment

matrix-assisted laser desorption ionization-time of flight mass spectrometry [MALDI-TOF mass spectrometry]: identification method; two-dimensional gel electrophoresis: molecular method, polyacrylamide gel electrophoresis; urinary proteome analysis: diagnostic method, molecular method

IT Miscellaneous Descriptors

proteomics

ORGN Classifier

Hominidae 86215

Super Taxa

Primates; Mammalia; Vertebrata; Chordata; Animalia

Organism Name

human: patient

Taxa Notes

Animals, Chordates, Humans, Mammals, Primates, Vertebrates

albumin; alpha-1-acid glycoprotein 2; alpha-1-antitrypsin; alpha-1-microglobulin; high molecular weight proteins; low molecular weight proteins; zinc-alpha-2-glycoprotein

IT Methods & Equipment

matrix-assisted laser desorption ionization-time of flight mass spectrometry [MALDI-TOF mass spectrometry]: identification method; two-dimensional gel electrophoresis: molecular method, polyacrylamide gel electrophoresis; urinary proteome analysis: diagnostic method, molecular method

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